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EXAMINER

BARNES, CRYSTAL J

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/698,234

Applicant(s)

PREISS ET AL.

Examiner

Crystal J. Barnes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,10-13 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,3,6-9,14,15 and 17-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: communication bus 5 and bus coupler 4 on page 7 lines 27-28 do not appear in figure 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 5,960,214 to Sharpe, Jr. et al.

As per claims 1 and 10 wherein a method for integration of a field device in an installation control system, wherein the installation control system has a communications network and a control station, the method comprising a) transmitting, by the field device [devices 16, 18, 20, 22, 24], a functional description [device related information] of its device functions to the control station [distributed control system 14] in a standardized form; b) installing functions [read data from] associated with the field device on the control station; and c) configuring communications links [communication line 42] between the device functions and functions of the control station;

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the Sharpe, Jr. et al. reference discloses a management system 10 interconnected with a process 12, a distributed control system 14 which controls the process (see figure 1 and columns 5-6 lines 65-3). The process 12 may comprise any desired type of process and is illustrated as including four smart field devices 16, 18, 20, 22 and a conventional device 24 (see column 6 lines 3-9). The FMS database 40 stores device-related information that is not available from the smart devices (see column 6 lines 27-28). The smart devices 16 and 18 are on-line devices that are connected to the FMS system via a communication line 42 and a modem 44 (see column 6 lines 41-56). To retrieve specific data from, or pertaining to, one of the on-line devices of the process 12, the server 68 asks the DDS 72 for the specific data (see column 11 lines 7-13). The smart device communication interface 74 then sends a request to the DDS 72 for information on how to retrieve the specific data requested by the server 68 from the on-line device (see column 11 lines 26-29). The smart device then responds with a data stream including the specific data (see column 11 lines 33-34). The process of writing data to an online device is similar to the process of reading data from that device except that the server 68 first sends a request to the DDS 72 for write information (see column 11 lines 47-51). A

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device ID typically includes a triplet of information comprising the name of the device manufacturer, the model number of the device, and the serial number of the device. Device tags and physical tags usually refer to a location of the device in a plant or a process such as the process 12 (see column 15 lines 14-18).

6. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,059,439 to Besnard.

As per claims 1 and 10 wherein a method for integration of a field device in an installation control system, wherein the installation control system has a communications network and a control station, the method comprising a) transmitting, by the field device [pre-automation devices 12], a functional description [acquisition of information] of its device functions to the control station [supervision unit 11] in a standardized form; b) installing functions [memorization of information] associated with the field device on the control station; and c) configuring communications links [management of communications] between the device functions and functions of the control station; the Besnard reference discloses a pre-automation system for the installations of an industrial, tertiary, or other building comprises a network

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of cables 10 which is designed to connect a supervision unit 11 to pre-automation devices 12 (see figure 1 and column 2 lines 16-23). The microprocessor 19 is microprogrammed in order to perform a number of functions, e.g.: the acquisition of information coming from the sensors 13, memorization of information coming from the sensors 13, management of communications with the supervision unit, and all other functions which may be necessary for a Technical Management of the Building or a Centralized Administrative Management (see column 2 lines 43-56).

7. Claims 1, 4, 10, 12, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,298,377 to Hartikainen et al.

As per claims 1 and 10 wherein a method for integration of a field device in an installation control system, wherein the installation control system has a communications network and a control station, the method comprising a) transmitting, by the field device [intelligent field devices], a functional description [data] of its device functions to the control station [field device maintenance management system 10] in a standardized form; b) installing functions [collected data] associated with the field device on the control station; and c) configuring communications links [HART] between the

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device functions and functions of the control station; the Hartikainen et al. reference discloses the control and I/O part 12 is connected via buses in accordance with HART standard to intelligent field devices constituted by control valves 14, 15, 16 and valve controllers 14A, 15A, 16A (see figure 1 and column 4 lines 50-53). HART enables a two-way communication, by means of which intelligent field devices can be controlled and data can be read from them (see column 4 lines 57-59). The condition of field devices is monitored by means of a field device maintenance management system 10 that collects data from the field devices (see column 5 lines 14-17). The purpose of the software is to collect data from intelligent field devices 14 to 16 (see column 5 lines 26-27).

As per claims 4 and 16 wherein at least one function of the control station is installed automatically on the basis of the nature of this function, the Hartikainen et al. reference discloses the purpose of the software is to collect data from intelligent field devices 14 to 16. This data collecting is fully automatic and requires no staff (see column 5 lines 26-28).

As per claim 12 wherein a field device for integration in an installation control system, wherein the field device comprises: a functional description [data] of at least one device function of the field device [intelligent field



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devices]; and an interface [communication interface] for transmitting the functional description of the at least one device function of the field device via the installation control system; the Hartikainen et al. reference discloses open communication interface implies for instance that the communication method by which the condition data of the field devices are transmitted to the other system is independent of the type of field device and the nature of field communication interface (see column 6 lines 58-62).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,298,377 to Hartikainen et al. in view of [http://www.nettedautomation.com/standardization/IEC\\_TC57/WG10-12/iec61850/61850\\_on\\_a\\_page.html](http://www.nettedautomation.com/standardization/IEC_TC57/WG10-12/iec61850/61850_on_a_page.html)

As per claims 5, 11 and 13 wherein the functional descriptions of the field device use a description language in accordance with IEC Standard 61850-6 or its draft, the Hartikainen et al. reference discloses a maintenance control system of field devices communicates with the field devices of the process over a field communication interface using a predetermined field protocol such as HART. The system may also have several different field communication interfaces (see column 2 lines 36-41). The system may preferably support several different open communication methods (see column 2 lines 53-55). A HART instruction set contains universal commands understood by all field devices and device-specific commands providing functions that are restricted to an individual device (see column 4 lines 64-67).

The Hartikainen et al. reference does not expressly disclose IEC Standard 61850-6 or its draft.

The "IEC 61850 on a page" reference discloses the objective of IEC 61850 is to dramatically improve device data integration. IEC 61850 differs from most previous utility protocols in its use of object models of device functions and device components.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to associate the field communication protocol taught by the Hartikainen et al. reference to a standard utilized in communication networks and systems taught by the "IEC 61850 on a page" reference.

One of ordinary skill in the art would have been motivated to modify field communication protocol according to the IEC Standard 61850 to allow for seamless data integration.

10. Claim 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,960,214 to Sharpe, Jr. et al.

As per claim 12 wherein a field device for integration in an installation control system, wherein the field device comprises: a functional description [device description] of at least one device function of the field device; and an interface [smart device communication interface 74] for transmitting the functional description of the at least one device function of the field device via the installation control system; the Sharpe, Jr. et al. reference discloses communication with smart devices has been simplified to some extent with the advent of device description languages and device description services

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which are provided by the manufacturers of smart field devices (see column 2 lines 45-57). When the host system receives a DD object file for a smart device, it can decode and interpret the DD to derive a complete description of the interface with the device (see column 3 lines 1-11). Because of the consistent use of DDL's to access information pertaining to multiple devices, an application need not be reprogrammed to communicate with, read data from, reconfigure, or display data pertaining to a new device added to the system (see column 5 lines 9-19). A device ID typically includes a triplet of information comprising the name of the device manufacturer, the model number of the device, and the serial number of the device. Device tags and physical tags usually refer to a location of the device in a plant or a process such as the process 12 (see column 15 lines 14-18).

The Sharpe, Jr. et al. reference does not expressly disclose an installation control system.

However, it would be logical to reason that the field device management system could be used in any desired type of control system whether it be process and/or plant control.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the field device management

system to provide a consistent and generalized communication connection between an application and multiple devices connected to the system so that no new programming is necessary to communicate with a newly added smart device (see column 4-5 lines 66-4).

One of ordinary skill in the art would have been motivated to modify the field device management system so that the field devices interconnected with a plant instead of a process.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,960,214 to Sharpe, Jr. et al. in view of [http://www.nettedautomation.com/standardization/IEC\\_TC57/WG10-12/iec61850/61850\\_on\\_a\\_page.html](http://www.nettedautomation.com/standardization/IEC_TC57/WG10-12/iec61850/61850_on_a_page.html)

As per claim 13 wherein the functional description is described in a description language [description language] in accordance with IEC Standard 61850-6 or its draft, the Sharpe, Jr. et al. reference discloses a DDL is a human-readable language that provides a protocol for describing the data available from a smart device, the meaning of the data associated with the smart device and retrieved therefrom, the methods available for implementation of the smart device, the format for communicating with the

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smart device to obtain data, and data necessary for handling or interpreting other information pertaining to a smart device (see column 2 lines 49-58).

In some cases, for example in Fieldbus devices, DDL source files may be stored in a smart device and transferred from the smart device to a host system (see column 3 lines 5-8).

The Sharpe, Jr. et al. reference does not expressly disclose IEC Standard 61850-6 or its draft.

The "IEC 61850 on a page" reference discloses the objective of IEC 61850 is to dramatically improve device data integration. IEC 61850 differs from most previous utility protocols in its use of object models of device functions and device components.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to associate the device description language taught by the Sharpe, Jr. et al. reference to a standard utilized in communication networks and systems taught by the "IEC 61850 on a page" reference.

One of ordinary skill in the art would have been motivated to modify device description language according to the IEC Standard 61850 to allow for seamless data integration.

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12. Claims 2, 3, 6-9, 14, 15, and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to field device management in general:

USPN 5,420,578 to O'Brien et al.

USPN 5,760,492 to Kanoi et al.

USPN 6,195,591 to Nixon et al.

USPN 6,301,527 to Butland et al.

USPN 6,377,874 to Ykema

USPN 6,449,715 to Krivoshein


US 2002/0183863 to Eryurek

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 703.306.5448. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on 703.305.8498. The fax phone numbers for the organization where this application or proceeding is assigned are 703.746.7239 for regular communications and 703.746.7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.3900.

cjb  
December 31, 2002



EMANUEL TODD VELTZ  
PRIMARY EXAMINER